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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,982	02/01/2002	Norm Hendrickson	41768/PYI/V165	4215

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EXAMINER	
MEEK, JACOB M	

ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/066,982	HENDRICKSON, NORM	
	Examiner	Art Unit	
	Jacob Meek	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *34 - 41, 47, 49 - 61* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *47* is/are allowed.

6)☒ Claim(s) *34-37, 49 - 61* is/are rejected.

7)☒ Claim(s) *38 - 41* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 34 – 41, and 49 - 61 is withdrawn in view of the careful review of reference(s) to RZ clock recovery finds that prior art reveals known attributes. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 34 – 37, and 49 - 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bladh (US-6,324,236, previously cited) in view of Cunningham et al (US-4,970,609, applicant's IDS).

With regard to claim 34, Bladh discloses an RZ recovery system comprising: 1st recovery unit configured to receive a data signal and identify a 1st data transition and determine a 1st phase information when 1st type of data transition is identified (see figure 1, 10, 12 where IRZ+ is 1st transition type); 2nd recovery unit configured to receive a data signal and identify a 2nd data transition and determine a 2nd phase information when 2nd type of data transition is identified (see figure 1, 10, 12 where IRZ- is 2nd transition type); and wherein 1st recovery unit generates a 1st recovered clock signal based on 1st phase information (see figure 1, 12, 16; figure 2, 20; and column 3, lines 24 – 39 where this clock recovery function is interpreted as equivalent in view of lack of specific description), and 2nd recovery unit

generates a 2nd recovered clock signal based on 2nd phase information (see figure 1, 13, 16; figure 2, 21; and column 3, lines 24 – 39 where this clock recovery function is interpreted as equivalent in view of lack of specific description). Bladh does not disclose 1st and 2nd recovery units as individual units. Bladh discloses a different arrangement whereby 1st and 2nd functions are combined in individual units for edge detection and phase generation. Cunningham discloses a system for the recovery of clocking showing a 1st recovery unit detects a 1st edge (see figure 2, 37, 42, 49 where this chain detects positive edges) and a 2nd recovery unit detects a 2nd edge type (see figure 2, 38, 43, 48 where this chain detects negative edges). It would have been obvious to one of ordinary skill in the at the time of invention that 1st and 2nd recovery units as could be described based on Bladh in view of Cunningham disclosure of a similar function arranged as 1st and 2nd recovery units and given their similar intended use.

With regard to claim 35, Bladh discloses the system of claim 34 further comprising: a interpolator configured to generate a 3rd recovered clock signal based on 1st and 2nd recovered clock signals (see figure 1, 17, 18, clk and column 3, lines 3 – 17 where outputs from detectors are combined to drive VCO to produce 3rd clock (see column 3, lines 24 – 39) where, in lack of specifics regarding interpolator in claim interpolator is interpreted as the definition of interpolate: *To insert or introduce between other elements or parts*. Where Bladh's elements can be viewed as an interpolator by virtue of their positioning between 1st and 2nd clock elements and 3rd clock element).

With regard to claim 36, Bladh discloses the system of claim 35 wherein the 3rd recovered clock signal is an additive result of 1st and 2nd recovered clock signals (see figure 2, 22 and column 3, lines 23 – 39 where this is interpreted as an additive result).

With regard to claim 37, Bladh discloses the system of claim 35 wherein the 3rd recovered clock signal is an additive result of 1st and 2nd recovered clock signals (see figure 2, 22 and column 3, lines 23 – 39 where this is interpreted as an additive result).

With regard to claim 49, Bladh discloses an RZ recovery system comprising: 1st recovery unit configured to receive a data signal and identify a 1st data transition and determine a 1st phase information when 1st type of data transition is identified (see figure 1, 10, 12 where IRZ+ is 1st transition type); 2nd recovery unit configured to receive a data signal and identify a 2nd data transition and determine a 2nd phase information when 2nd type of data transition is identified (see figure 1, 10, 12 where IRZ- is 2nd transition type); wherein 1st recovery unit comprises a 1st phase detector configured to determine phase difference between a 1st recovered clock and data signal (see figure 2, 20, IRZ+, clk and column 3, lines 24 - 26 where this phase detector is interpreted as equivalent in view of lack of specific description); and wherein phase detector generates a phase difference signal based on the determined phase difference (see column 3, lines 30 – 39 where this phase detector is interpreted as equivalent in view of lack of specific description). Bladh does not disclose 1st and 2nd recovery units as individual units. Bladh discloses a different arrangement whereby 1st and 2nd functions are combined in individual units for edge detection and phase generation. Cunningham discloses a system for the recovery of clocking showing a 1st recovery unit detects a 1st edge (see figure 2, 37, 42, 49 where this chain detects positive edges) and a 2nd recovery unit detects a 2nd edge type (see figure 2, 38, 43, 48 where this chain detects negative edges). It would have been obvious to one of ordinary skill in the at the time of invention that 1st and 2nd recovery units as could be described based on Bladh in view of Cunningham disclosure of a similar function arranged as 1st and 2nd recovery units and given their similar intended use.

With regard to claim 50, Bladh discloses phase difference signal is proportional to determined phase difference by virtue of output duration of pulse (see column 3, lines 30 – 39).

With regard to claim 51, Bladh discloses a loop filter configured to receive phase difference signal from 1st phase detector (see figure 2, 23, and 24).

With regard to claim 52, Bladh discloses recovery unit further comprises an oscillator (see figure 1, 18 and column 3, lines 5 – 6), and wherein 1st loop filter filters phase difference signal provides filtered signal to oscillator (see column 3, lines 3 – 6).

With regard to claims 53 and 54, Bladh discloses the oscillator adjusts the phase/frequency of recovered clock based on filtered phase difference signal (see column 3, lines 46 – 51).

With regard to claim 56, Bladh discloses a 2nd recovery unit comprises a 2nd phase detector configured to determine phase difference between a 2nd recovered clock and data signal (see figure 2, 21, IRZ-, clk and column 3, lines 24 - 26); and wherein phase detector generates a phase difference signal based on the determined phase difference (see column 3, lines 30 – 39). Bladh does not disclose 1st and 2nd recovery units as individual units. Bladh discloses a different arrangement whereby 1st and 2nd functions are combined in individual units for edge detection and phase generation. Bladh's arrangement provides the functionality claimed by applicant. It would have been obvious to one of ordinary skill in the at the time of invention that 1st and 2nd recovery units could be described based on Bladh's since it has been held the rearrangement of parts involves only routine skill in the art.

With regard to claim 57, Bladh discloses a loop filter configured to receive phase difference signal from 1st phase detector (see figure 2, 23, and 24). Bladh shows a single loop filter. It would have been obvious to one of ordinary skill in the art at the time of

invention to provide a 2nd loop filter, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

With regard to claim 58, 1st recovery unit comprises an oscillator (see figure 1, 18), and loop filter filters the phase difference signal and provides filtered phase difference signal to oscillator.

With regard to claims 59 and 60, Bladh discloses the oscillator adjusts the phase/frequency of recovered clock based on filtered phase difference signal (see column 3, lines 46 – 51). (Examiner notes that 1st and 2nd clocks are identical based on claim language.)

With regard to claim 61, Bladh discloses the system of claim 35 further comprises a sampling unit configured to sample data using 3rd recovered clock signal (see figure 1, 14 &15 and column 3, lines 15 – 18).

Allowable Subject Matter

3. Claim 47 is allowed.

4. Claims 38 - 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Meek whose telephone number is (571)272-3013. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571)272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMM
3/14/06

MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER